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December 7, 1940

PROPOSED REVISED UNITED STATES STANDARDS
FOR QUALITY OF SHELL EGGS

(Not Official Standards)

Definitions

For the purpose of the United States standards for quality of shell eggs:

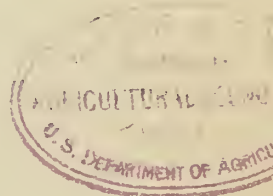
Shell Eggs. -- Shell Eggs shall be the product of the domestic fowl and in the shell.

CLASSES OF SHELL EGGS.

Classes for shell eggs are established as follows:

- (1) Based on condition of shell.
 - (a) NATURAL EGGS shall be eggs that have not been commercially treated with any material that alters the condition or appearance of the shells.
 - (b) SHELL PROCESSED EGGS shall be eggs that have been processed by the application of odorless, tasteless mineral oil so that the shell pores have been closed with the processing oil. (See Note 1)
 - (c) SHELL CLEANED EGGS shall be those that have been cleaned with sand or other abrasive for the purpose of removing dirt, stain, processing fluid or other foreign material. (See Note 1)
 - (d) WASHED EGGS shall be those that have been washed with water or other fluid. (See Note 1)

Note 1 -- A lot of eggs that contains more than 10% of either shell processed, shell cleaned or washed eggs shall be respectively classified as "Shell Processed Eggs," "Shell Cleaned Eggs," or "Washed Eggs."



(2) Based on color of shell.

- (a) BROWN EGGS shall be eggs with brown colored shells, free from white eggs and containing not to exceed 20 percent of eggs with cream colored shells.
- (b) WHITE EGGS shall be eggs with white shells of which at least 80 percent shall be chalk white and the balance may be slightly cream tinted.
- (c) CREAM (TINTED) EGGS shall be eggs with cream colored shells. A lot of cream (tinted) eggs may contain less than 80 percent white shell eggs or not to exceed 70 percent of white shell eggs and not to exceed 10 percent of light brown shell eggs.
- (d) MIXED COLOR EGGS shall be eggs comprising a lot of which a part may be white eggs and a part brown eggs. Eggs with cream (tinted) shells also may be included in mixed color eggs.

(3) Based on characteristics indicating age.

- (a) HELD EGGS shall be eggs that have the normal characteristics of eggs that have been held for a longer or shorter period of time and/or before an egg candle shows a dark brownish-colored ring at the edge of the lower surface of the air cell. Other conditions normally present in held eggs, such as sunken yolks and mold growth on the shell, may also be considered as characteristics indicating evidence of age in classifying eggs as held eggs.
- (b) NON-HELD EGGS shall be eggs which do not have the characteristics of held eggs.

(4) Based on soundness of shell.

- (a) UNBROKEN SHELL EGGS are eggs which have unbroken shells and are free from blind checks or other checked or cracked condition of their shells.
- (b) CHECKED SHELL EGGS are eggs which have a cracked or damaged condition of the shell, but in which the shell membrane is unbroken and, therefore, there is no leakage from the egg.
- (c) LEAKING OR SMASHED SHELL EGGS are eggs which have checked or smashed shells and the shell membrane is broken to the extent that the contents of the egg may leak through the shell.

(5) INEDIBLE EGGS. Under the Federal Food, Drug and Cosmetic Act eggs that are filthy, putrid or decomposed in whole or in part are adulterated. The following are regarded as inedible eggs: Black rots, whiterots, mixed rots (addled eggs), sour eggs, eggs with green whites, eggs with stuck yolks, moldy eggs, eggs showing blood rings, eggs containing embryo chicks (at or beyond the blood ring stage), and any other eggs which are filthy, decomposed, or putrid. For the purpose of the United States Standards for Quality of Shell Eggs, eggs with bloody whites or eggs containing large blood clots or large or unsightly meat spots shall be considered inedible eggs.

(6) LOSS. Eggs that are inedible, leaking, or smashed or that contain bloody whites, large blood spots or large or unsightly meat spots shall be classified as Loss.

(7) Based on weight per dozen:

The following weight classifications are established for shell eggs of the various consumer grades:

Size or Weight Class	Minimum Net Weight per Dozen (Ounces)	Minimum Net Weight per 30 Dozen (Pounds)	Minimum Weight for Individual Eggs (Rate per dozen) (Ounces)
JUMBO	26-1/2	48	25
LARGE	24	45	23
MEDIUM	21	40	20
SMALL	18	34	15

UNITED STATES STANDARDS FOR QUALITY OF INDIVIDUAL SHELL EGGS

Standards for Individual Clean, Unbroken Shell Eggs

United States Standards for Quality of individual eggs with clean, unbroken shells are established as follows:

U. S. GRADE AA (U. S. SPECIAL). The shell must be clean, unbroken, and normal. The air cell must not exceed $1/8$ inch in depth and may be regular or slightly wavy. The yolk must be well centered and its outline may be slightly defined. The yolk must be free from defects or blemishes visible before the candle. The white must be clear and firm.

U. S. GRADE A (U. S. EXTRA). The shell must be clean, unbroken, and normal. The air cell must not exceed $3/16$ inch in depth and may be regular or slightly wavy. The yolk must be fairly well centered and its outline may be moderately defined. The yolk must be free from defects or blemishes visible before the candle. The white must be clear and reasonably firm.

U. S. GRADE B (U. S. STANDARD). The shell must be clean and unbroken, but may be slightly abnormal. The air cell must not exceed $5/16$ inch in depth and may show movement not in excess of $1/2$ inch. If the air cell is small (not over $3/16$ inch in depth) it may be free. The yolk outline may be well defined. The yolk may be mobile and may show before the candle definite but not serious defects. The white must be clear but may be slightly weak.

U. S. GRADE C (U. S. TRADE). The shell must be clean and unbroken but may be abnormal. The air cell may be over $5/16$ inch in depth, and may be bubbly or free. The yolk may be plainly visible freely mobile, and appear dark. The yolk may show clearly visible germ development, but no blood due to such development. It may show other serious defects that do not render the egg inedible. The white may be weak and watery. Small meat spots or small blood clots may be present but in the consumer grades shall not exceed 2%.

Standards for Individual Dirty, Sound Shell Eggs.

United States Standards for Quality of individual shell eggs with soiled, stained, or dirty shells are established as follows:

U. S. GRADE A (DIRTY) or U. S. EXTRA (DIRTY). The specification for an egg of this quality shall be the same as for a clean U. S. GRADE A except that the shell may be slightly stained or slightly soiled.

U. S. GRADE B (DIRTY) or U. S. STANDARD (DIRTY). The specification for an egg of this quality shall be the same as for a clean U. S. GRADE B except that the shell may be stained or dirty.

U. S. GRADE C (DIRTY) or U. S. TRADE (DIRTY). The specification for an egg of this quality shall be the same as for a clean U. S. GRADE C except that the shell may be stained or dirty.

UNITED STATES CONSUMER GRADES FOR EGGS NOT CLASSIFIED AS HELE EGGS

United States Consumer Grades for shell eggs (not classified as held eggs) are established as follows:

U. S. GRADE AA shall consist of eggs of which at least 80% are of the quality of U. S. Grade AA and the balance, except for tolerance, are of the quality of U. S. Grade A, or better. The maximum number of eggs allowed as tolerance per 30 dozen eggs, except as provided by the Rule Governing Substitution, shall be 9 checked and 8 slightly stained or slightly soiled U. S. Grade A. (For weight requirements see class (7), page 3.)

U. S. GRADE A shall consist of eggs of which at least 80% are of the quality of U. S. Grade A, or better, and the balance except for tolerance, are of the quality of U. S. Grade B, or better. The maximum number of eggs allowed as tolerance per 30 dozen eggs, except as provided by the Rule Governing Substitution, shall be 12 check and 12 slightly stained or slightly soiled U. S. Grade B. (For weight requirements see class (7), page 3.)

U. S. GRADE B shall consist of eggs of which at least 80% are of the quality of U. S. Grade B, or better, and the balance, except for tolerance, are of the quality of U. S. Grade C or slightly stained or slightly soiled U. S. Grade B, or better. The maximum number of eggs allowed as tolerance per 30 dozen eggs shall be 16 checked. (For weight requirements see class (7), page 3.)

U. S. GRADE C shall consist of eggs of which at least 80% are of the quality of U. S. Grade C, or better, and the balance, except for tolerance, are of the quality of stained, or dirty U. S. Grade C, or better. The maximum number of eggs allowed as tolerance per 30 dozen eggs shall be 18 checked. (For weight requirements see class (7), page 3.)

UNITED STATES CONSUMER GRADES FOR HELD EGGS

United States Consumer Grades for Held eggs are established, corresponding to each of the United States Consumer Grades for shell eggs (not classified as held eggs), except U. S. Grade AA, and except that the air cell depth for eggs of the quality of U. S. Grade A held eggs may not exceed 1/4 inch in depth, and for eggs of the quality of U. S. Grade B held eggs, may not exceed 3/8 inch in depth, and provided further, that the specified minimum net weight for each United States Consumer Grade of held eggs may be one-half ounce per dozen or one pound per 30 dozen less than for the corresponding United States Consumer Grade of shell eggs (not classified as held eggs).

"NO GRADE" EGGS

Any lot of eggs that fails to meet the requirements of a U. S. Grade or any lot of eggs that has been contaminated by smoke, chemical or other foreign material in such a way as to affect seriously the character, appearance or flavor of the eggs shall be classed as "No Grade". A slight abnormal flavor in held eggs shall not be considered sufficient cause for classifying such eggs as "No Grade".

DEFINITIONS OF TERMS

Terms Descriptive of Shell.

- (1) **CLEAN.** A clean shell is one that is free from foreign matter and from stains or discolorations that are readily visible. Eggs that show traces of processing oil on the shell are considered clean when classified as processed unless the shell is otherwise soiled.
- (2) **SLIGHTLY STAINED or SLIGHTLY SOILED.** A slightly stained or slightly soiled shell is one that has slightly soiled spots or stained spots on it that are readily visible or that shows a slightly mussy appearance but without adhering dirt which could be readily detached. Slight stains, or finger marks are typical eggs of this character.
- (3) **STAINED or DIRTY.** A stained or dirty shell is one that has dirty or stained spots of considerable size. Stained or dirty eggs may also have loose or readily detachable dirt on the shell.
- (4) **UNBROKEN.** An unbroken shell is one that is free from blind checks, checks, or cracks.
- (5) **CHECKED or CRACKED.** A checked or cracked shell is one that has an actual break in the shell but where the shell membrane is unbroken so that there is no leakage from the egg.

- (6) LEAKER. A leaker is an egg in which the shell and shell membrane are broken to the extent that there is leakage of the egg contents through the shell.
- (7) SMASHED. A smashed egg is one in which the shell has been partly or wholly destroyed so that a considerable proportion of the egg content has escaped.
- (8) NORMAL. A normal shell is one that approximates the usual shape and that is of good, even texture and strength and free from distinct ridges, rough areas, thin spots, or other conditions not common to good shells. Slight ridges and rough areas that do not affect materially the shape, texture and strength of the shell are permitted.
- (9) SLIGHTLY ABNORMAL. A slightly abnormal shell is one that may be somewhat unusual in shape or that may be somewhat faulty in texture or strength. It may also show distinct but not pronounced ridges, thin spots or rough areas.
- (10) ABNORMAL. An abnormal shell is one that may be decidedly misshapen or that may be decidedly faulty in texture or strength or that may show pronounced ridges, rough spots, or other defects.

Terms Descriptive of the Air Cell.

- (11) DEPTH OF AIR CELL. The depth of the air cell when in its natural position is the distance from the large end of the egg to the plane passing through the egg at the point where the air cell outline touches the shell.
- (12) REGULAR. A regular air cell is one that retains a fixed position in the egg and that shows a practically even, smooth outline without any movement when the egg is twirled.
- (13) SLIGHTLY WAVY. A slightly wavy air cell is one that retains a practically fixed position in the egg but shows a slight movement, not to exceed $1/8$ inch, at any one point where its lower edge touches the shell.
- (14) MOVEMENT NOT IN EXCESS OF $1/2$ INCH. An air cell that shows a movement not in excess of $1/2$ inch at any one point where its lower edge touches the shell.
- (15) BUBBLY AIR CELL. A bubbly air cell is one that has several rather small bubbles within or beneath it that give it a bubbly appearance.
- (16) FREE. A free air cell is one that moves freely about in the egg. Such an air cell will seek the uppermost point in the egg, no matter in what position the egg may be held.

Terms Descriptive of the Yolk.

- (17) WELL CENTERED. A yolk that occupies the center of the egg without much movement from that position when the egg is twirled.
- (18) FAIRLY WELL CENTERED. A yolk that occupies the center of the egg but which may show a moderate movement from that position when the egg is twirled.
- (19) OUTLINE SLIGHTLY DEFINED. A yolk, the outline of which, when viewed before the candle, is indistinctly indicated and tends to blend into the surrounding white.
- (20) OUTLINE MODERATELY DEFINED. A yolk, the outline of which, when viewed before the candle, is discernible but not clearly and definitely demarcated. Visibility of yolk due to yolk color should not be confused with a moderately defined outline of yolk.
- (21) OUTLINE WELL DEFINED. A yolk, the outline of which, when viewed before the candle, is quite definite and distinct.
- (22) MOBILE. A mobile yolk is one that shows appreciable movement away from the center of the egg when the egg is twirled before the candle.
- (23) FREELY MOBILE. A freely mobile yolk is one that shows a wide movement or swing away from the center of the egg when the egg is twirled before the candle and that comes sufficiently close to the shell to appear decidedly dark.
- (24) PLAINLY VISIBLE. A plainly visible yolk is one that has a definitely discernible outline before the candle and that may appear dark.
- (25) FREE FROM DEFECTS OR BLEMISHES VISIBLE BEFORE THE CANDLE. A yolk that when viewed before the candle shows no spots or areas on its surface indicating the presence of germ development, defects or blemishes.
- (26) DEFINITE BUT NOT SERIOUS DEFECTS VISIBLE BEFORE THE CANDLE. A yolk that may show spots or areas on its surface when viewed before the candle indicative of definite defects but with no definite indication of germ development or other pronounced or serious defects or blemishes.
- (27) OTHER SERIOUS DEFECTS. A yolk that is weak or that shows well developed spots or areas of a character that constitute serious defects or blemishes but do not render the egg inedible.

- (28) CLEARLY VISIBLE GERM DEVELOPMENT. A development of the germ on the yolk of a fertile egg that has progressed to a point at which it is plainly visible before the candle as a rather definite, deeper colored area or as a bubble or spot on the yolk.
- (29) BLOOD DUE TO GERM DEVELOPMENT. Blood caused by development of the germ in a fertile egg to the point where blood has formed and is visible before the candle. Such eggs are classed as inedible.
- (30) BLOOD NOT DUE TO GERM DEVELOPMENT (Blood spots). Spots or clots of blood usually on the surface of the yolk but sometimes floating in the white. Such blood clots or spots are incorporated in the egg during its formation as or after the yolk leaves the ovary. Such blood spots have no connection with germ development. If they are small (not over 1/8 inch in any diameter) the eggs may be classed as U. S. Trades (U. S. Grade C). If they are large, the egg should be classed in inedible.

Terms Descriptive of the White.

- (31) CLEAR. A clear white is one that is free from discoloration or from any foreign bodies floating in it. Prominent chalazae should not be confused with foreign bodies.
- (32) FIRM. A firm white is one that is sufficiently thick or viscous to permit but limited movement of the yolk from the center of the egg when it is twirled. A firm white should have the approximate consistency of the whites shown in numbers 1, 1.5, or 2 of the Van Wagenen chart of broken-out eggs.
- (33) REASONABLY FIRM. A reasonably firm white is one that has a reasonably good viscous condition but not as strong a condition as a firm white. It should have the approximate consistency of the whites shown in numbers 2, 2.5, or 3 of the Van Wagenen broken-out egg chart. A reasonably firm white permits the yolk to move somewhat more freely from its normal position in the center of the egg and thus to approach the shell more clearly when the egg is twirled. A reasonably firm white may therefore cause the outline of the yolk to be moderately defined.
- (34) SLIGHTLY WEAK. A slightly weak white is one that has lost its firm or even its reasonably firm condition, has become more watery and is not as clearly differentiated from the thin white when the egg is broken out. It should have the approximate consistency of the whites shown in numbers 3, 3.5 or 4 of the Van Wagenen chart of broken-out eggs.

- (35) WEAK AND WATERY. A weak and watery white is one that is thin and generally lacking in viscosity and that therefore permits the yolk to move freely from its normal position in the center of the egg and to approach the shell closely when the egg is twirled. It should have the approximate consistency of the whites shown in numbers 4, 4.5, or 5 of the Van Wagenen chart of broken-out eggs.
- (36) SMALL MEAT SPOTS. Small meat spots are small pieces of foreign material present in the egg white and that are visible before the candle as dark, irregularly shaped bodies. When an egg contains a small meat spot (not over 1/8 inch in any diameter) that can be readily removed when the egg is broken, the egg may be classed as a U. S. Trade (U. S. Grade C). Eggs containing large or unsightly meat spots should be classed as inedible.
- (37) BLOODY WHITE. An egg, the white of which has blood diffused more or less generally through it. Such a condition may be present in newlaid eggs but, because of the unappetizing appearance, eggs with bloody whites are classed as inedible.

CHART OF PROPOSED REVISED UNITED STATES STANDARDS FOR INDIVIDUAL (NON-HELD)* EGGS WITH CLEAN, UNBROKEN SHELLS

(Numbers in parentheses are the numbers of the definitions of terms used. See pages 6 to 10)

Quality Factors	SPECIFICATIONS OF EACH QUALITY FACTOR			
	U. S. Grade AA (U. S. Special)	U. S. Grade A (U. S. Extra)	U. S. Grade B (U. S. Standard)	U. S. Grade C (U. S. Trade)
SHELL	Clean (1); unbroken (4); Normal (8).	Clean (1); unbroken (4); normal (8).	Clean (1); unbroken (4); may be slightly abnormal (9).	Clean (1); unbroken (4); may be abnormal (10).
AIR CELL	One-eighth inch or less in depth (11); regular (12); or may be slightly wavy (13).	Three-sixteenth inch or less in depth (11); regular (12); or may be slightly wavy (13).	Five-sixteenth inch or less in depth (11); may show movement not in excess of one-half inch (14). The air cell may be free (16) if it is small (not over three-sixteenth inch in depth).	May be over five-sixteenth inch in depth (11); may be bubbly (15) or free (16).
YOLK	Well centered (17); outline slightly defined (19); free from visible defects or blemishes (25).	Fairly well centered (18); outline moderately defined (20); free from visible defects or blemishes (25).	Outline may be well defined (21); may be mobile (22); may show definite but not serious defects (26).	May be plainly visible (24); may be freely mobile (23) and appear dark; may show clearly visible germ development (28) but no blood due to such development (29); may show other serious defects (27) that do not render egg inedible (38).
WHITE	Clear (31); firm (32).	Clear (31); reasonably firm (33).	Clear (31); may be slightly weak (34).	May be weak and watery (35); small meat spots (36) or small blood clots (30) may be present.

* The U. S. Standards for Individual Eggs when Applied to Held Eggs permit an air cell depth, in U. S. Grade A and U. S. Grade B, of 1/16 inch greater than for Non-held Eggs.

CHART OF PROPOSED REVISED UNITED STATES CONSUMER GRADES FOR NON-HELD* SHELL EGGS

U. S. CONSUMER GRADES	U. S. Grade AA (U. S. Specials)	U. S. Grade A (U. S. Extras)	U. S. Grade B (U. S. Standards) or better	U. S. Grade C (U. S. Trades) or better	U. S. Grade C (U. S. Trades) or slightly stained or slightly soiled U. S. Grade B (U. S. Standards) or better	Maximum Number of Eggs Allowed as Tolerance per 30 Dozen Eggs (Figures in parentheses are percentages)		
	Minimum Percentage	Minimum Percentage	Minimum Percentage	Minimum Percentage		Cracks or Slightly stained or slightly soiled U. S. Grade A (U. S. Extras)	Slightly stained or slightly soiled U. S. Grade B (U. S. Standards)	Stained or dirty U. S. Grade C (U. S. Trades)
U. S. Grade AA	80	Balance				9 (2.5)	8 (2.2)	
U. S. Grade A	80	Balance				12 (3.3)	12 (3.3)	
U. S. Grade B		80	Balance			16 (4.4)		
U. S. Grade C			80	Balance		18 (5.)		Balance

THE FOLLOWING WEIGHTS SHALL APPLY TO THE PROPOSED REVISED U. S. CONSUMER GRADES FOR NON-HELD* SHELL EGGS

Weight Class	Minimum Average Net Weight per Dozen (Ounces)	Minimum Average Net Weight per 30 Dozen (Pounds)	Minimum Weight for Individual Eggs (Rate per Dozen)(Ounces)
JUMBO	26- 1/2	48	25
LARGE	24	45	23
MEDIUM	21	40	20
SMALL	18	34	15

UNITED STATES CONSUMER GRADES FOR HELD EGGS - United States Consumer Grades for Held shell eggs are the same as the corresponding consumer grades for Non-held shell eggs, except U. S. Grade AA, and except that the air cell depth for eggs of the quality of U. S. Grade A, clean or dirty, may not exceed 1/4 inch in depth, and for eggs of the quality of U. S. Grade B, clean or dirty, may not exceed 3/8 inch in depth, and provided further, that the specified minimum net weight for each held United States Consumer Grade may be one-half ounce per dozen or one pound per 30 dozen less than for the corresponding Non-held United States Consumer Grade.

